

REMARKS

Status of Claims

Claims 1-13 are pending and have been rejected. Claim 5 is objected to because of lack of clarity and precision.

Claims 1-3, 6-11 and 13 have been cancelled. Claims 4, 5 and 12 have been amended to correct informalities in the claim language and to more clearly define the claimed subject matter. Claims 14-10 have been added to recite additional subject matter disclosed in the original specification that was not previously claimed.

Objections

In the outstanding Office Action dated March 22, 2007, the Examiner objected to the specification and Claim 5 because of lack of clarity and precision. Applicants respectfully submit that amendments made to the specification and the claim overcome these objections.

Rejection under 35 U.S.C. §102(e)

Claims 1, 2, 4, 5 and 12 are rejected under 35 U.S.C. §102(e) as being anticipated by Denyer et al. (USP 6,486,911). Applicants respectfully traverse this rejection for the following reasons.

Claims 4 and 5 has been amended to incorporate all the limitation recited in Claim 1 and to more clearly define the claimed subject matter. With regard to Claim 4, the Examiner asserts that Denyer et al. disclose a first shift register (element 16, FIG. 3 of Denyer et al.) for performing sequential scanning to ones of the plurality of the pixels arranged in the horizontal direction, and a second shift register (element 18, FIG. 3 of Denyer et al.) for performing

sequential scanning to ones of the plurality of the pixels arranged in the horizontal direction and including color filters of the same color.

However, neither of the shift registers (16 or 18 in FIG. 3 of Denyer et al.) disclosed in Denyer et al. teach or suggest a shift register for performing sequential scanning to all of the plurality of the pixels either in a vertical or a horizontal direction. Each of the shift registers 16 or 18 in Denyer et al. performs scanning to *alternate* pixels, not sequentially to all pixels in the imaging apparatus. In other words, each of the shift registers in Denyer et al. outputs signals from only half of the pixels in one horizontal or vertical scan. In this regard, the Examiner's attention is respectfully directed to col. 6, lines 42-55 in Denyer et al. In contrast, the shift register in the present invention may sequentially output signals from all of the pixels in one horizontal or vertical scan.

In addition, with regard to a second shift register, Denyer et al. fail to disclose a second shift register for performing scanning to the plurality of pixels either in a vertical or a horizontal direction partially in the manner that pixels having color filters of the same color are continuously scanned. Each of the shift registers 16 or 18 in Denyer et al. performs scanning to *alternate* pixels, not to all pixels in the imaging apparatus. In addition, the each of the shift registers 16 or 18 in Denyer et al. outputs the signal only from the pixel having the same color filter within one horizontal or vertical scan. In contrast, the second shift register in the present invention may output partially continuous signals from the pixels having the same color. The output may contain the signal from the pixels having different colors within one horizontal or vertical scan (see, for example, FIG. 1).

With regard to Claim 5, the Examiner asserted that Denyer et al. disclose the signal outputting means (read out means 45 in FIG. 6 of Denyer et al.) include a shift register for

performing sequential scanning to ones of the plurality of the pixels arranged in the horizontal direction and output means (elements 45-48 in FIG. 6 of Denyer et al.) for switching between a first output method in which charge signals received from the shift register are output so that charge signals of pixels arranged in the horizontal direction are sequentially output and a second output method in which charge signals received from the shift register are sequentially output and then outputting charge signals.

Applicant, however, respectfully submit that Denyer et al. fail to disclose an output circuit for outputting charge signals from the shift register, the output circuit configured to switch between a first output method in which the charge signals are output so that charge signals of all pixels arranged in the vertical direction or the horizontal direction are sequentially output and a second output method in which the charge signals are output so that charge signals of pixels having color filters of the same color are partially continuously output. In particular, Denyer et al. fail to teach or suggest that the output circuit is configured to switch between the first output method and the second output method. The output means in Denyer et al. operate to order the pixel output signals for each row into like-coloured pixel group (see col. 8 lines 41-44 in Denyer et al.). In other words, the output means in Denyer et al. output signals for only the like-coloured pixel group, but cannot switch between two different types of methods to output the charge signals.

With regard to Claim 12, similar to Claim 4, Denyer et al. fail to disclose a signal output circuit configured to perform two types of operations, wherein the signal output circuit includes a first shift register for performing sequential scanning to all of the plurality of the pixels either in a vertical or a horizontal direction and a second shift register for performing scanning to the

plurality of pixels either in a vertical or a horizontal direction partially in the manner that pixels having color filters of the same color are continuously scanned.

Thus, as anticipation under 35 U.S.C. § 102 requires that “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed Cir. 1987), and at a minimum, the cited prior art does not disclose expressly or inherently the above recited limitations, it is respectfully submitted that Claims 4, 5 and 12 are patentable over the cited prior art.

With regard to new claims 16-19, Applicants respectfully submit that since these claims are dependent either upon Claim 4 or 5, these claims are also allowable.

CONCLUSION

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

Respectfully submitted,

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